August 4, 2016

Ms. Felicia Marcus, Chair
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

Mr. Ken Harris, State Oil and Gas Supervisor
Division of Oil, Gas, and Geothermal Resources
Department of Conservation
801 K Street, MS 24-02
Sacramento, CA 95814

Dear Chair Marcus and Supervisor Harris

We are writing with regards to upcoming aquifer exemption applications that are likely to come before the State Water Resources Control Board (State Board) and the Division of Oil, Gas and Geothermal Resources (DOGGR) for consideration, prior to submission to US EPA. Our organizations wish to raise a fundamental concern with the process for exempting potential drinking water sources from the protections of the Safe Drinking Water Act in order for oil and gas companies to conduct injection activities into these water sources. In particular, we are concerned that, given the State's current lack of knowledge about California's cumulative groundwater resources,[1] the severe drought, and the likelihood of more frequent and serious droughts due to anthropogenic climate change, the ad hoc exemption of dozens of aquifers without considering the cumulative impacts of these exemptions taken together threatens to create a situation in which the State realizes the disastrous consequences of its actions on state and regional water supply too late.

[1] As demonstrated most recently in a Stanford study: Kang, Mary and Robert B. Jackson, "Salinity of Deep Groundwater in California: Water Quantity, Quality, and Protection," Proceedings of the National Academy of Sciences, Vol. 113, No. 28, pp. 7768-7773 ("Kang"), *available at*: http://www.pnas.org/content/113/28/7768.full. For instance, the study states: "Groundwater volume estimates in California are uncertain and require additional studies. As an example, the groundwater estimate for the well-studied Central Valley Aquifer of 1,000 km^3 (830 million acre-ft) is more than 20 y old (32) and still widely used as a reference [citation omitted]."

We request that, prior to sending any exemption applications to EPA, the State consider the potential cumulative impacts of exempting multiple aquifers on state and regional water supplies. Furthermore, prior to submitting any more aquifer exemptions to EPA, the State must analyze the cumulative impacts of these exemptions under the California Environmental Quality Act.[2]

The criteria for aquifer exemptions do not envision a situation like the current California scenario, where operators are concurrently seeking numerous exemptions. Neither the federal regulations (40 CFR § 146.4), nor California's Public Resource Code (Pub. Res. Code § 3131) explicitly enumerate any specific analysis beyond whether an individual proposed aquifer exemption satisfies the criteria. Simply reviewing exemption applications on a case by case basis without considering the impact of all exemptions on the groundwater resources of the affected groundwater basins, particularly the Tulare Lake Basin, will result in an insufficient analysis.

The State must move beyond the case by case analysis that looks at each exemption application in a vacuum and must instead assess these numerous potential exemptions in the context of their cumulative impacts on state and regional water supply. To date, it does not appear that any of the exemption applications under consideration by the State or EPA have undergone such scrutiny.

In the Tulare Lake Basin, where the majority of the aquifer exemption requests originate, there will be multiple requests for exemptions in aquifers that extend from one field to another. To attempt to assess the impact of exempting an aquifer in one field without simultaneously assessing the effect this will have on that same aquifer in neighboring fields guarantees that the analysis will be flawed and insufficient since it will exclude significant factors. The aquifer exemption application for the Santa Margarita zone in the Fruitvale Oil Field, which the State is preparing to send to the EPA, is a prime example of this, since it fails to assess the conditions of the Santa Margarita aquifer in the neighboring Kern Front and Kern River oil fields, where this formation is currently nonexempt.

The State must analyze key information, such as the total volume of water contained in each of the proposed exemption zones. Given the current situation, in which the State is considering up to 70 potential aquifer exemptions, the State must consider the total volume of potential drinking water that may be handed over to oil and gas companies. It does not appear that any state agency is conducting a macro-level analysis of the combined impacts of these numerous exemptions. Without this calculation, it is impossible to assess the combined impacts of these exemptions.

Instead of limiting analysis to whether an individual exemption meets the criteria by itself, the state must view exemption applications through a broader lens. This is especially important when considering any criteria which require assessing the economic or technical feasibility of whether or not the aquifer could serve as a drinking water source or have beneficial uses, such as with sections 146.4(b)(2), 146.4(b)(3), of 146.4(c) of the federal regulations. The results of analyses to determine the costs and/or feasibility of extraction, any required treatment, or potential for beneficial use may be different when considering multiple proposed exemptions

[2] CEQA Guidelines §§ 15130, 15355, 15065(a)(3).

together instead of reviewing each aquifer in isolation. It is possible, for instance, that efficiencies of scale may result from numerous aquifers in the same geographic region utilizing a common treatment facility or other infrastructure.

In the aggregate, the impact of these exemptions will be millions of acre-feet of water becoming permanently unavailable for any beneficial uses, at a time when the most recent drought already caused the state to lose *trillions* of its overall reserves, most from underground aquifers.[3] Given the State's poor understanding of its groundwater resources, sacrificing multiple aquifers in the same region may have a cumulative impact on the hydrology and groundwater levels of the region—something that will not show up in an individual exemption analysis. Indeed, as the drought forces residential and agricultural users to dig new and ever-deeper water wells,[4] a cumulative analysis of aquifer exemptions that takes into account this statewide trend can provide a more thorough understanding of California's water needs and the cumulative impacts of these exemptions on those needs.

The use of already depleted groundwater aquifers to dispose of oil field wastewater is a wasteful, unreasonable use of water. The State Board has a duty to nullify this wasteful, unreasonable use of our aquifers, and to recalibrate and rebalance the groundwater system in light of current and likely future droughts and other threats posed by climate change.

Therefore, we request that the State first issue a moratorium on aquifer exemptions and on injections into protected aquifers. During the moratorium, the State should complete a thorough cumulative analysis of the impact of exempting California's groundwater resources from the Safe Drinking Water Act on California's hydrology and water supply needs, taking into account likely future conditions of further drought, modern treatment technologies, and economies of scale. Thank you for considering this request. We look forward to hearing a response and would welcome your perspective on how your agencies can ensure sound decisions are made in the coming months as they consider dozens of aquifer exemptions applications.

Sincerely,

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[3] Richtel, Matt, "California Farmers Dig Deeper for Water, Sipping Their Neighbors Dry," *New York Times* (June 5, 2015) ("Richtel"), *available at*: http://www.nytimes.com/2015/06/07/business/energy-environment/california-farmers-dig-deeper-for-water-sipping-their-neighbors-dry.html?_r=0.

[4] *See* Kang, *supra*, noting e.g., "[c]urrent technologies and growing water demands have made water wells deeper than 1,000 ft more common. Thus, groundwater volumes reflecting this change and including deeper and saline groundwater resources are needed. / As deeper groundwater resources become increasingly important, additional studies are needed for evaluating subsurface activities that could contaminate these resources." *See also* Richtel, *supra*.

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Senate Committee on Natural Resources and Water
Assembly Committee on Natural Resources